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Message Text

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ORIGIN OES-06

INFO OCT-01 IO-13 ISO-00 NASA-01 EB-08 L-03 SP-02
NSCE-00 INRE-00 ACDA-07 CIAE-00 DODE-00 PM-04
INR-07 NSAE-00 NSC-05 ERDA-05 SSO-00 AF-08 ARA-06
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IO/UNP:BFOPPEL
EB/TT/TD:GHUFFCUTT
L/UNA:AKRECZKO
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E.O. 11652: N/A

TAGS: TSPA, UN

SUBJECT: UN OUTER SPACE LEGAL SUBCOMMITTEE (LSC):
GEOSYNCHRONOUS ORBITS

REF: USUN 914

1. FOLLOWING IS SCIENTIFIC/TECHNICAL STATEMENT FOR USE
BY USDEL IN LSC PLENARY DEBATE ON GEOSYNCHRONOUS ORBITS:

A. IN DISCUSSIONS OF THE DELIMITATION OF OUTER SPACE
WE HAVE HEARD SEVERAL STATEMENTS CONCERNING THE NATURE
AND STATUS OF THE GEOSYNCHRONOUS ORBIT AND THE STATUS
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IN SUCH AN ORBIT OF A GEOSTATIONARY SATELLITE. THERE
ARE TWO BASIC ASPECTS TO THIS MATTER: THE SCIENTIFIC/
TECHNICAL ASPECT AND THE LEGAL ASPECT.

B. THE EFFECTIVE USE OF SPACE FOR MOST APPLICATIONS
REQUIRES THE PLACEMENT OF VEHICLES INTO GENERALLY
ELLIPTICAL AND CIRCULAR ORBITS ABOUT THE EARTH.

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FLIGHT ASCENDENCY INTO THESE ORBITS CAN BE EFFECTED FROM
A WIDE RANGE OF LOCATIONS ON THE SURFACE OF THE EARTH
WITH VARYING ENERGY REQUIREMENTS DEPENDING UPON THE
AZIMUTH AND LATITUDE OF LAUNCH. THE CHARACTERISTICS
OF THE ORBIT ARE DEPENDENT TO A SUBSTANTIAL DEGREE

ON THE GRAVITATIONAL FIELD OF THE EARTH AND UPON THE
VELOCITY, ALTITUDE AND AZIMUTH OF INSERTION. THE
GRAVITATIONAL FIELD IS DERIVED FROM THE TOTAL MASS
OF THE EARTH AND, EXCEPT FOR VERY SMALL EFFECTS, IS
INDEPENDENT OF THE DETAILED CHARACTERISTICS OF THE EARTH'S
SURFACE AND IS NOT AFFECTED BY BOUNDARIES OF ANY OF THE
VARIOUS COUNTRIES THEREON.

C. FROM A SCIENTIFIC AND TECHNICAL STANDPOINT THE
GEOSYNCHRONOUS ORBIT OF THE EARTH IS LIKE ANY OTHER
ORBIT WHICH IS REGULARIZED, STANDARDIZED OR REPEATED.
SINCE ALL REPETITIVE ORBITS INVOLVE CONTINUOUS MOTION
AROUND THE EARTH, IT IS POSSIBLE WITH THE ROTATION OF
THE EARTH TO CHOOSE A CIRCULAR ORBIT OF SUCH RADIUS,
PERIOD AND INCLINATION THAT THE MOTION OF AN ORBITAL
VEHICLE IS SYNCHRONIZED, OR NEARLY SO, WITH A LOCATION
ON THE SURFACE OF THE EARTH. FORTUNATELY, THE ROTATION
OF THE EARTH IS SUCH AS TO ALLOW SATELLITE SYNCHRONIZA-
TION AT ORBITAL RADII WHICH ARE SUITABLE FOR EFFECTIVE
SATELLITE APPLICATIONS.

D. THE SATELLITE'S PATH THROUGH SPACE IS AFFECTED BY A
COMBINATION OF FACTORS, INCLUDING AT LEAST THE ENERGY
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IMPARTED BY THE LAUNCH VEHICLE, THE MASS OF THE SPACE-
CRAFT, THE ALTITUDE AT WHICH IT MOVES ABOVE THE EARTH,
THE FORCES OF GRAVITYOFTHE EARTH, THE MOON, THE SUN, AND
THE RADIATION PRESSURE OF THE SUN. CONSEQUENTLY, THE
GEOSYNCHRONOUS ORBIT IS ESSENTIALLY A REGIME OF
SATELLITE FLIGHT PATHS NOT A PHYSICAL NATURAL RESOURCE.

K. IF THE EARTH WERE ROTATING MORE RAPIDLY THE GEO-
SYNCHRONOUS ALTITUDE WOULD BE LESS THAN PRESENT AND IF
THE EARTH WERE ROTATING MORE SLOWLY THAT ALTITUDE WOULD
BE GREATER. THE CONNECTION BETWEEN ORBITAL MECHANICS
AND THE EARTH'S CURRENT ROTATIONAL VELOCITY BEARS NO
CAUSITIVE RELATIONSHIP TO LOCATIONS ON THE EARTH'S
SURFACE, BUT IS RATHER AN INTERACTION BASED ON THE
PROPERTIES OF THE WHOLE EARTH.

F. IN HIS REPORT TO THE LEGAL SUBCOMMITTEE ON CURRENT
DEVELOPMENTS IN AND RECENT WORK OF THE ITU, THE DEPUTY
SECRETARY GENERAL OF THE ITU CONSISTENTLY DESCRIBED THAT

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WORK IN CONNECTION WITH THE GEOSYNCHRONOUS ORBIT AS DEALING WITH "NOMINAL ORBITS" AND "NOMINAL ORBIT LOCATIONS." THE REASON OF COURSE IS TO REFLECT THE FACT THAT SUCH POSITIONS IN SPACE ARE ONLY NOMINAL AND REQUIRE CONSTANT MONITORING AND ADJUSTMENT.

G. THERE IS, THEREFORE, NO SCIENTIFIC/TECHNICAL BASIS FOR CONSIDERING THE GEOSYNCHRONOUS ORBIT, OR ANY PART OF IT, TO BEAR ANY SPECIAL RELATION TO AN UNDERLYING COUNTRY. IN FACT, THERE IS CLEAR SCIENTIFIC BASIS FOR RECOGNIZING THAT THIS ORBIT DERIVES ITS MAIN CHARACTERISTICS FROM PROPERTIES OF THE ENTIRE EARTH, IRRESPECTIVE OF NATIONAL BOUNDARIES OR JURISDICTIONS, AS WELL AS BEING AFFECTED BY OTHER FORCES AT WORK IN THE ORBITAL LOCATION.

2. IN PREPARING MATERIAL ON LEGAL IMPLICATIONS OF
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GEOSYNCHRONOUS ORBIT ISSUE FOR LSC STATEMENT, DEL SHOULD DRAW ON AND REITERATE POINTS USED WITH COLOMBIA ON THIS SUBJECT IN OCTOBER 1976 FOUND IN PARA 2 OF STATE 260266 (21 OCTOBER 1976).

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Message Attributes

Automatic Decaptioning: X
Capture Date: 01-Jan-1994 12:00:00 am
Channel Indicators: n/a
Current Classification: UNCLASSIFIED
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Copy: SINGLE
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Decaption Date: 01-Jan-1960 12:00:00 am
Decaption Note:
Disposition Action: RELEASED
Disposition Approved on Date:
Disposition Case Number: n/a
Disposition Comment: 25 YEAR REVIEW
Disposition Date: 22 May 2009
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
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Document Unique ID: 00
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Enclosure: n/a
Executive Order: N/A
Errors: N/A
Expiration:
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Original Classification: LIMITED OFFICIAL USE
Original Handling Restrictions: n/a
Original Previous Classification: n/a
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Previous Handling Restrictions: n/a
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Retention: 0
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SAS ID: 2891434
Secure: OPEN
Status: NATIVE
Subject: UN OUTER SPACE LEGAL SUBCOMMITTEE (LSC): GEOSYNCHRONOUS ORBITS
TAGS: TSPA, US, UN
To: USUN NEW YORK
Type: TE
vdkvgwkey: odbc://SAS/SAS.dbo.SAS_Docs/2411efa9-c288-dd11-92da-001cc4696bcc
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